

BEFORE THE
NEW MEXICO OIL CONSERVATION COMMISSION
Santa Fe, New Mexico

March 31, 1971

EXAMINER HEARING

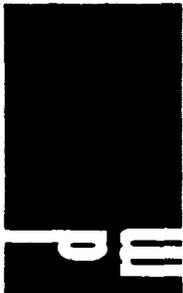
IN THE MATTER OF:

Case 4353 being reopened pursuant
to the provisions of Order Number
R-3963, which Order established
160 acre spacing units for the
Tres Papalotes-Pennsylvania Pool,
Lea County, New Mexico, for a
period of one year.

Case No. 4353

BEFORE: ELVIS A. UTZ, Examiner

TRANSCRIPT OF HEARING



NEW MEXICO OIL CONSERVATION COMMISSION

EXAMINER HEARING

SANTA FE, NEW MEXICO

Hearing Date MARCH 31, 1971 TIME: 9 A.M.

NAME	REPRESENTING	LOCATION
S.G. Buell	Montgomery, Federico & Co.	Santa Fe
E. B. White, Jr.	American Quasar Petro. Co. of N.M.	Midland, Texas
W. J. Henry	American Quasar Petro. Corp. N.M.	Midland, Texas
W. M. Cronan	Lone Star Prod. Co.	Dallas, Tex.
John Casey	Jake R. Harmon	Dallas-Mid., Tex.
Mike Fortale ^(not testifying)	Lone Star Producing	Dallas
James H. Hinkle	" " Midwest & Plains	Midland
Richard Blackwell	Midwest Oil Corp.	Midland
Jason Kellahin	Kellahin & Fox	Santa Fe
Omar S. Brown	Midwest Oil Corp.	Midland
D.T. STOGNER, JR.	MIDWEST OIL CORP.	MIDLAND, TEXAS
Earl E. Goetz	Consulting Geol.	Midland, Tex
Norm S. Durburne	P. W. Bryan & Co.	Santa Fe

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1 MR. UTZ: The hearing will come to order, please.
 2 First case on the docket will be 4353.

3 MR. HATCH: Case 4353. Reopened in the matter of
 4 Case 4353 being reopened pursuant to the provisions of
 5 Order Number R-3963, which order established 160 acre spacing
 6 units for the Tres Papalotes-Pennsylvania Pool, Lea County,
 7 New Mexico, for a period of one year.

8 MR. HINKLE: Clarence Hinkle, Hinkle, Bondurant,
 9 Cox and Eaton, Roswell, representing Lone Star Producing
 10 Company.

11 MR. UTZ: Are there other appearances?

12 MR. KELLAHIN: Jason Kellahin, if the Examiner
 13 please, Kellahin and Fox, Santa Fe, appearing on behalf of
 14 Sun Oil Company. We will not have any testimony to offer,
 15 only a statement.

16 MR. UTZ: All right. Other appearances?

17 (Witnesses sworn.)

18 MR. HINKLE: We have five exhibits. This is the
 19 official copy that has been marked. Are you ready?

20 MR. UTZ: Yes, sir. You may proceed.
 21
 22
 23
 24
 25

1 W. M. CRONAN

2 called as a witness, having been first duly sworn, was
3 examined and testified as follows:

4 DIRECT EXAMINATION

5 BY MR. HINKLE:

6 Q State your name, your residence, and by whom you are
7 employed.

8 A W. M. Cronan, 3802 Eugene Court South, Irving, Texas,
9 employed by Lone Star Producing Company as chief
10 engineer.

11 Q Have you previously testified before the Oil Conservation
12 Commission?

13 A No, sir, I have not.

14 Q Are you a graduate petroleum engineer?

15 A Yes, sir. Graduated from Louisiana State University in
16 1956. I have ten years' experience as a production
17 engineer, two years as a district engineer, and I have
18 operated in my present capacity as chief engineer for the
19 last three years.

20 Q How long have you been with Lone Star Producing Company?

21 A Fifteen years.

22 Q Have you made a study of the Papalotes-Pennsylvanian Pool?

23 A Yes, I have.

24 Q Have you been familiar with it since its discovery?

25 A Yes, I have.

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- 1 Q Were you present at the original Case Number 4353 before
 2 the Commission?
- 3 A Yes, I was.
- 4 Q You heard the testimony?
- 5 A Yes.
- 6 Q Are you familiar with the exhibits that were introduced
 7 in that case?
- 8 A Yes, sir.
- 9 Q And you have made a study of all the wells in the pool --
- 10 A Yes, sir, I have.
- 11 Q -- of the production and all information available?
- 12 A Yes, sir.
- 13 Q You are familiar with the temporary pool rules that have
 14 been adopted in this case?
- 15 A Yes, sir, I am.
- 16 Q And what do they provide, as far as spacing is concerned?
- 17 A They provide for 180 acre -- 160 acre spacing with well
 18 location to be within 150 feet of a quarter quarter
 19 section.
- 20 Q Have you prepared or has there been prepared under your
 21 direction, certain exhibits for introduction into this
 22 case?
- 23 A Yes, I have.
- 24 Q Refer to Exhibit Number 1, and explain what this is, and
 25 what it shows.

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- 1 A This exhibit shows that the field is composed entirely
 2 of state leases, Lone Star Producing Company is the
 3 operator of three wells in Section 33, namely, the
 4 New Mexico 80 State Number 1, New Mexico 86 State Number 1,
 5 New Mexico 87 State Number 1, and that Sun is the
 6 operator of a well in the Northwest Quarter of
 7 Section 34. This is the only other well in the field.
- 8 Q This also shows the ownership of the acreage in the pool?
 9 A Yes, sir, it does.
- 10 Q And the dry holes that have been drilled surrounding it?
 11 A Yes, they do.
- 12 Q Now, refer to Exhibit Number 2 and explain that.
 13 A Exhibit Number 2 shows the field as an anticlinal
 14 structure and that the limits of the field have been
 15 defined by dry holes, except to the northeast. The Sun
 16 New Mexico U State Number 1 well initially and
 17 currently is producing with an approximately fifty-five
 18 percent water cut, and therefore, we feel that the
 19 northeast limit has also been established.
- 20 Q This is contoured on what, then?
 21 A This is contoured on top of the Sun limit, Sun three.
 22 This is in the Pennsylvanian.
- 23 Q From correlation of the location and the records on it?
 24 A That's correct.
- 25 Q Now, refer to Exhibit 3 and explain that.

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1 A Exhibit 3 is a cross section drawn for the producing
2 wells in the field, as will be noted by the plat in
3 the lower left-hand corner. This map is drawn from
4 south to north, and then over to the Sun east, to the
5 Sun State U, well number 1.

6 Q Then all of the wells and the producing wells are shown
7 on this cross section?

8 A Yes, sir. They are, and this shows the continuity of
9 the formation and also verifies the structure map that
10 was presented as Exhibit Number 2.

11 Q That is the only purpose of this exhibit, to show the
12 continuity of the Sun?

13 A Yes, sir, that's correct.

14 Q Now, have you compiled any information on the pressure
15 history and the cumulative production?

16 A Yes, sir, I have.

17 Q Refer to Exhibit 4 and explain that.

18 A The first portion of it is a pressure history of the
19 field since the initial well was drilled, which is the
20 Number 80 State Number 1, as can be seen, the initial
21 reservoir pressure as of January 8th, 1970, was 3986
22 pounds. On June the 10th, 1970, the second well was
23 drilled, the New Mexico 86 State Number 1, and the
24 initial pressure in this well was 3231 pounds, and this
25 indicated a pressure loss of 755 pounds.

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1 Later it -- on January the 14th, 1971 -- we ought
 2 to make a correction there. I have that listed as
 3 January 14th, 1970. It should be '71. The initial
 4 pressure in the well was -- in the third well, was 2159
 5 pounds. This also showed a decrease. From this, we can
 6 draw the conclusion that these wells are in the same
 7 reservoir, that there's good communication between the
 8 wells, and that the reservoir is being effectively drained
 9 by these wells.

10 Pressure data was not available on the Sun well, and
 11 therefore, it was not included in this tabulation.

12 Q Does this also show the cumulative production from the
 13 wells you have indicated?

14 A Yes, it does. We have indicated the cumulative production
 15 as of March the 1st, 1971. With this data, we made a
 16 material balance calculation below the bubble point, and
 17 calculated an in-place oil of 2.4 million barrels.

18 Using it and a material balance calculation, we
 19 calculated a recovery factor of twenty-seven percent,
 20 and this resulted in a total recoverable oil of 648,000
 21 barrels.

22 For convenience purposes, I based everything back to
 23 the first of the year, as it was the first of the year,
 24 241,467 barrels of oil had been produced, leaving a
 25 remaining recoverable reserve of 406 feet, 406,533 barrels.

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1 Gas is being sold from this field, and based on
 2 the initial solution gas-oil ratio, the calculated initial
 3 oil in-place, 2.4, with the solution gas of 1430, was
 4 calculated at -- let's see, and the recovery of eighty
 5 percent of the gas in-place.

6 It was calculated initial recoverable gas was 2.7
 7 billion feet of gas. To date, .3 billion feet of gas
 8 have been produced, leaving a remaining of 2.4 billion
 9 feet. You divide this in between four wells, it leaves
 10 a recoverable gas of approximately six hundred million
 11 feet of gas per well.

12 MR. UTZ: Now, you say to date, you mean 3-1-71?

13 THE WITNESS: On the gas, I brought it -- I didn't
 14 have the gas figures broken out. The gas is as of 3-1-71.

15 Q (Mr. Hinkle continuing) Do you have any information on
 16 the production decline curve?

17 A Yes, sir, I do.

18 Q Refer to Exhibit 5 and explain that.

19 A Exhibit 5 is a production decline curve based on
 20 production from the first two wells that were drilled on
 21 the reservoir, the New Mexico 80 and 86 State Number 1
 22 well. The third well that was drilled, we do not have
 23 sufficient production data to establish a decline, but
 24 since we have shown with our pressure history that we have
 25 good communication between the wells, it will be

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1 acceptable to accept the decline curve established by
 2 the two wells. Based on this, we calculate a remaining
 3 recoverable reserve of approximately 291,000 barrels of
 4 oil.

5 If this third well and any subsequent wells are
 6 brought in, they will increase the current production,
 7 but the decline would be sharper to where we should still
 8 recover the same remaining recoverable reserves of
 9 291,000 barrels.

10 Q Now, from your testimony and your study that you have made
 11 of this area, in your opinion, will one well effectively
 12 and efficiently drain 160 acres or more?

13 A Yes, sir. I think that the pressure history bears this
 14 out.

15 Q Have you made a study of the economics of drilling 160
 16 and 80 and 40 acres in this area?

17 A Yes, sir. Taking the material balance remaining reserves,
 18 if we drill an additional well, a fourth well in this
 19 reservoir, we could optimistically say it would have a
 20 remaining recovery reserve of 100,000 barrels. At the
 21 current price of three point -- \$3.41 a barrel, we would
 22 realize a gross income of \$341,000. Gross income from gas
 23 would be \$91,680 for a total gross of \$432,680.

24 We deduct the royalty, the tax, and operating
 25 expenses, we arrive at a net income of \$276,223. The

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1 average cost that we find in drilling wells in this
 2 field is approximately \$210,000. Calculating your
 3 income to investment ratio, you arrive at a 1.3 to 1
 4 which isn't very good return on your money, when you
 5 consider that this income has to be discounted over
 6 approximately three years, which we project from the
 7 decline curve with the additional well.

8 Your discounted income will be somewhat less, and
 9 would then have effect of reducing your ratio even more.

10 Q What would happen if you drilled it on forty or eighty-
 11 acre basis?

12 A In effect, what you would be doing if you drilled it on
 13 eighties, would be cutting this remaining reserve in half,
 14 which would make it very uneconomical to drill these
 15 wells, because you wouldn't get a dollar-to-dollar return
 16 on your investment.

17 Q It would cause an economic loss?

18 A It sure would.

19 Q Now, do you have any recommendations to make to the
 20 Commission with respect to the special pool rules in this
 21 case?

22 A Yes, sir. We recommend to the Commission that the
 23 existing temporary rules be adopted as permanent rules
 24 for the Papalotes-Pennsylvanian Pool.

25 Q In your opinion, would the permanent adoption of these

1 rules be in the interest of conservation and prevention
2 of waste?

3 A Yes, sir, I do.

4 Q Would it also tend to protect correlative rights?

5 A Yes, sir.

6 Q Do you have anything else you would like to present in
7 this case?

8 A No, sir.

9 MR. HINKLE: We offer in evidence Exhibits 1
10 through 5.

11 MR. UTZ: Without objection, Exhibits 1 through 5
12 will be entered into the records of this case.

13 (Whereupon, Applicant's Exhibits
14 1 through 5 were duly admitted
15 into evidence.)

15 CROSS EXAMINATION

16 BY MR. UTZ:

17 Q Do you anticipate anymore drilling in this pool?

18 A Well, there is a possibility that we may drill one
19 additional well on 160 acres in -- what is that? I
20 believe the south --

21 MR. HINKLE: 28.

22 THE WITNESS: In the south half of 28. We are
23 presently looking at it. The economics look pretty slim
24 right now. The geologists are reviewing the area, and we
25 haven't reached a final decision at this time.

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1 Q Who owns the Southwest Quarter of 27?

2 A Southwest Quarter of 27?

3 Q Sun?

4 MR. HINKLE: Of 27, did you say?

5 MR. UTZ: Yes.

6 A Yes, sir. Sun --

7 MR. UTZ: How about the water cut on the other wells?

8 A We're making no water on our wells. Sun's wells originally
 9 came in with about fifty-five percent water cut, and they
 10 are pretty well maintaining the same cut. The material
 11 balance calculations in this constant water cut leads
 12 one to believe that this water is not active in this
 13 field.

14 Now, three miles to the north in the east
 15 Saunders field, it is active, but if this pressure drops,
 16 the water may become active. We don't know. This is one
 17 reason we are watching our pressures and keeping the data
 18 that we are.

19 MR. UTZ: Are there other questions of the witness?

20 MR. HINKLE: That's all we have.

21 Q (Mr. Utz continuing) And your communications test
 22 consists of Exhibit 4 as far as drainage is concerned?

23 A Yes, sir.

24 Q Communication between the wells?

25 A Yes, sir. I think this indicates that pretty well.

1 MR. HINKLE: Might ask you one more question.
 2 Outside of the well which you mentioned the possibility of
 3 drilling in 28, do you have any intention of drilling any
 4 other wells within the present limits of the pool?

5 THE WITNESS: No, sir, we do not.

6 MR. UTZ: Are there other questions of the witness?
 7 You may be excused. Statements in the case?

8 MR. KELLAHIN: If the Examiner please, Sun Oil
 9 Company is in support of the case that has been presented
 10 by Lone Star.

11 We feel that the pressure information that has been
 12 offered adequately supports the adoption of a permanent rule
 13 for 160 acre spacing in this pool. And in addition, the pool
 14 appears to be substantially developed, and both from the point
 15 of view of drainage, which we feel it is adequate, and
 16 economics, which have been shown to the Commission, any in-field
 17 drilling would not be justified.

18 Therefore, we support the position of Lone Star, and
 19 request the Commission to make the 160 acre rules permanent.

20 MR. UTZ: Are there other statements? Case will be
 21 taken under advisement.

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I N D E X

WITNESS

Page

W. M. CRONAN

Direct Examination by Mr. Hinkle

3

Cross Examination by Mr. Utz

11

EXHIBIT

MARKED

OFFERED AND
ADMITTED

Applicant's Exhibits 1 - 5

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1 STATE OF NEW MEXICO)
2 COUNTY OF BERNALILLO) SS

3 I, LINDA MALONE, Court Reporter in and for the
4 County of Bernalillo, State of New Mexico, do hereby certify
5 that the foregoing and attached Transcript of Hearing before
6 the New Mexico Oil Conservation Commission was reported by
7 me and that the same is a true and correct record of the said
8 proceedings, to the best of my knowledge, skill and ability.

Court Reporter

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I do hereby certify that the foregoing is
a complete record of the proceedings in
the hearing held on May 31, 1971.
Linda Malone
New Mexico Oil Conservation Commission